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वैटल निष्कर्ष — विशिष्टि  
( पहला पुनरीक्षण )

*Indian Standard*  
**WATTLE EXTRACT — SPECIFICATION**  
( *First Revision* )

ICS 59.140.10

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**BUREAU OF INDIAN STANDARDS**  
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## FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Leather, Tanning Materials and Allied Products Sectional Committee had been approved by the Chemical Division Council.

Wattle extract also known as mimosa extract is one of the most important tanning materials, and is extensively used in tanning hides and skins. This is mostly produced by extracting the barks of the tree, black wattle (*Acacia mearnsii* De Willd. Syn. *Acacia mollissima* auct. mult. non Willd., fam. Leguminosae), the native Australian tree now extensively cultivated in South Africa, East Africa and Kenya on plantation lines usually on 8 to 10 years rotation. Other less known species of wattle are golden wattle (*Acacia pycnantha* Benth.) — very rich in tannin; green wattle [*Acacia decurrens* (Wendl.) Willd.] — rich in tannin; and silver or blue wattle [*Acacia dealbata* Link Syn. *A. decurrens* (Wendl.) Willd. var. *dealbata* (Link) F.v.M.] — poor in tannins. The last three species mentioned yield highly coloured extracts compared to the pale coloured infusions obtained from black wattle and these species, therefore, are not used in commercial production of wattle extract.

The two species of wattle, namely, *Acacia mearnsii* De Willd., and *Acacia mollissima* auct. mult. non Willd., fam. Leguminosae and *Acacia decurrens* (Wendl.) Willd. are cultivated in the Nilgiris and the Kodaikanal Hills, Tamil Nadu. *Acacia mearnsii* species are raised in the Munnar Hills in Kerala as well as in Khasia and Jaintia Hills in Assam.

Mimosa extract has a high purity figure, low acid and salts content, high tan-non tan ratio. It penetrates, rapidly and uniformly through pelts and may be used for a wide range of tannage. It is less liable to deterioration by attack from micro-organisms than most natural tanning materials. In addition it has good affinity for the hide fibre and when used alone produces a well tanned leather of medium firmness, good wearing properties and good resistance to water penetration, with a characteristic fine grain and pale colour.

This standard was first published in 1971. In this revision, a test method has been introduced to estimate pentachlorophenol (PCP), keeping in view of the demand for eco-friendly inputs from the leather industry.

The composition of the Committee responsible for formulation of this standard is given in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (revised)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

# *Indian Standard*

## WATTLE EXTRACT — SPECIFICATION

### ( *First Revision* )

#### 1 SCOPE

This standard prescribes the requirements, the methods of sampling and test for wattle extract used for tanning.

#### 2 REFERENCES

The standards listed below contains provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards.

<i>IS No.</i>	<i>Title</i>
1640 : 2007	Glossary of terms relating to hides, skins and leather ( <i>first revision</i> )
3968 : 1967	Specification for wattle bark
4905 : 1968	Methods for random sampling
5466 : 1969	Methods of test for vegetable tanning materials

#### 3 TERMINOLOGY

For the purpose of this standard, the definition given in IS 1640 shall apply.

#### 4 TYPES

The material shall be of the following two types:

- a) Solid extract (SE); and
- b) Spray dried extract (SDE).

#### 5 REQUIREMENT

**5.1** The materials shall be made from aqueous extract of the bark of black wattle (*Acacia mearnsiui* De Willd. syn. *Acacia mollissima* auct. mult. non Willd.) conforming to IS 3968.

NOTE — Other species of wattle may also be used, if they satisfy the requirements prescribed in this standard.

**5.2** The material shall comply with the requirements given in Table 1, when tested according to the method indicated in col 5 of Table 1.

**5.3** The material, when stored under normal conditions of storage in original unopened containers, shall continue to satisfy the characteristics prescribed in Table 1 for a minimum period of six months from the date of packing.

#### 6 PACKING AND MARKING

##### 6.1 Packing

Unless otherwise agreed to between the purchaser and the supplier, the solid extract shall be packed in double gunny bags and the spray dried extract shall be packed in gunny bags, suitably lined with moisture-proof paper or polyethylene film.

##### 6.2 Marking

The containers shall be marked with the following information:

- a) Name of the material;
- b) Type of the material;
- c) Weight of the material;
- d) Manufacturer's name or recognized trade-mark, if any; and
- e) Identification in code or otherwise to enable the lot of manufacture to be traced out from records.

##### 6.2.1 BIS Certification Marking

The containers may also be marked with Standard Mark.

**6.2.1.1** The use of the Standard mark is governed by the provision of *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

#### 7 SAMPLE

##### 7.1 Preparation of Test Samples

Representative test samples of the material shall be prepared as prescribed in Annex A.

##### 7.2 Number of Tests

**7.2.1** Tests for the determination of tannins, non-tannins, moisture, insolubles and colour shall be conducted on each of the individual samples.

**7.2.2** Tests for the determination of all other characteristics specified in Table 1 shall be conducted on the composite sample.

**Table 1 Requirements for Wattle Extract**  
(Clauses 5.2, 5.3 and 7.2.2)

Sl No.	Characteristic	Requirement		Method of Test, Ref to Clause No. of IS 5466
		Solid Extract	Spray Dried Extract	
(1)	(2)	(3)	(4)	(5)
i)	Moisture, percent by mass, <i>Max</i>	17	6	<b>6</b>
ii)	Non-tan <sup>1)</sup> , percent by mass, <i>Max</i>	28	27	<b>9</b>
iii)	Tannins <sup>1)</sup> , percent by mass, <i>Min</i>	70	72	<b>10</b>
iv)	Insolubles <sup>1)</sup> , percent by mass, <i>Max</i>	3	2.5	<b>11</b>
v)	pH of analytical solution	4.8-5.4	4.8-5.4	<b>12</b>
vi)	Colour:			<b>13</b>
	a) Red, <i>Max</i>	1.5	2.0	—
	b) Yellow/red, <i>Min</i>	3.2	3.2	—
vii)	Iron <sup>1)</sup> mg/100 g, <i>Max</i>	5	5	<b>14</b>
viii)	Copper <sup>1)</sup> mg/100 g, <i>Max</i>	5	5	<b>15</b>
vii)	PCP content <sup>1)</sup> , mg/kg, <i>Max</i>	5	5	<b>16</b>

<sup>1)</sup> Calculated on moisture-free basis.

### 7.3 Criteria for Conformity

The lot shall be declared as conforming to the

requirements of the specification, if all the test results on individual as well as the composite samples meet the relevant stipulations for the different characteristics.

## ANNEX A

### (Clause 7.1)

#### PREPARATION OF TEST SAMPLES OF WATTLE EXTRACT

##### A-1 SCALE OF SAMPLING

###### A-1.1 Lot

In any consignment, all the containers of the material of the same size and drawn from a single batch of manufacture shall constitute a lot. If a consignment is known to consist of different batches of manufacture or of different sizes of containers, then the containers belonging to the same batch and sizes shall be grouped together and each such group shall constitute a separate lot.

**A-1.2** For ascertaining the conformity of the lot to the requirements of this specification, tests shall be carried out for each lot separately. The number of containers to be selected for this purpose ( $n$ ) shall depend on the size of the lot ( $N$ ) and shall be in accordance with Table 2.

**A-1.3** The containers shall be selected at random from the lot and in order to ensure randomness of selection, use of random number tables (*see* IS 4905) shall be made. In case, random number tables are not available, the following procedure may be adopted:

Starting from any container, count all the containers in the lot as 1, 2, 3, . . . . . up to  $r$  and so on,  $r$  being

the integral part of  $N/n$ , where  $N$  is the lot size and  $n$  the number of containers to be selected. Every  $r^{th}$  container thus counted shall be withdrawn to constitute the sample for tests.

**Table 2 Number of Containers to be Selected for Sampling**  
(Clause A-1.2)

Sl No.	Lot Size	Number of Containers to be Selected
	$N$	$n$
(1)	(2)	(3)
i)	Up to 40	3
ii)	41 – 65	4
iii)	66 – 110	5
iv)	111 – 180	6
v)	181 – 300	7
vi)	301 – 500	8
vii)	501 – 800	9
viii)	801 and above	10

##### A-2 PROCEDURE

**A-2.1** For taking out material from the containers, the latter shall be opened and the material taken out with the help of a sampling tool as shown in Fig. 1 or any other suitable appliances. From each of the containers selected according to **A-1.3**, small portions of the

material shall be drawn from different parts so as to get a representative sample. The total quantity of the material so collected from a container, shall not be less than eight times the quantity for testing as described in 6.2.

**A-2.2** Out of these portions a small but equal quantity of the material shall be taken out and thoroughly mixed to form a composite sample, about 200 g in weight. The composite sample shall be divided into three equal parts, one for the purchaser, another for the supplier and the third to be used as referee sample.

**A-2.3** The remaining portion of the material from each container shall be divided into three equal parts, each forming an individual sample. One set of individual samples representing the  $n$  containers selected, shall be marked for the purchaser, another for the supplier and the third to be used as a referee sample.

**A-2.4** All the individual and composite samples shall be immediately transferred to separate containers and shall be sealed air-tight and labelled with full identification particulars, such as manufacturer's name or trade-mark, identification code of the material, batch number ( if available ), date of sampling, sampler's name, etc.

NOTE — The time taken from the opening of original containers to the sealing of sample shall be as short as possible, care being taken to protect the sample from moisture and other contamination.

**A-2.5** The referee test samples consisting of a composite sample and a set of  $n$  individual samples shall bear the seal of both the purchaser and the supplier. They shall be kept at a place till such time and under conditions as agreed to between the purchaser and the supplier for use in case of any dispute between the two.

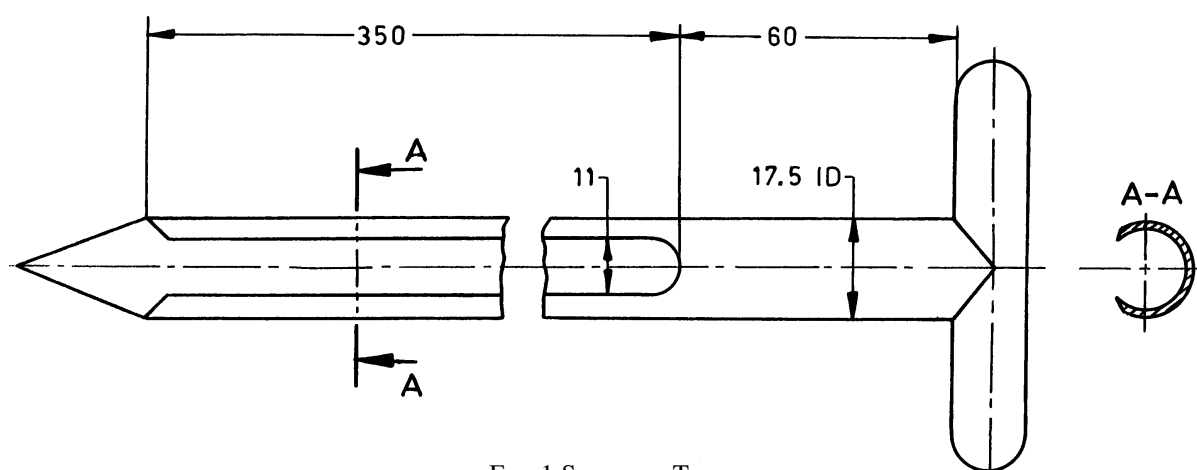


FIG. 1 SAMPLING TOOL

## ANNEX B

(Foreword)

### COMMITTEE COMPOSITION

Leather, Tanning Materials and Allied Products Sectional Committee, CHD 17

<i>Organization</i>	<i>Representatives(s)</i>
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### Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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